Mobility as a Service and Greener Transportation Systems in a Nordic Context
Preliminary findings

Barriers, incentives and policy recommendations

Gaia Consulting, The Leading Sustainable Business Consultancy
Tommi Lampikoski
Our offices

50 highly-educated professionals – multidisciplinary and cross-sectorial

700+ clients in 6 continents

Sustainability consultancy and business development since 1993

Strategy and implementation partner

Projects in 60+ countries
Agenda

• Introduction to the Nordic MaaS project
• Summary of barriers
• Ways to overcome the barriers with incentives and policy instruments
• Roles of players
• Case: Lahti city’s personal carbon trading scheme
Background

- The transport sector is a major source of greenhouse gas (GHG) emissions and other pollutants in the Nordic countries, as the sector still depends heavily on fossil fuels. Road transport generates also other emissions, such as particulate matter, that affect human health.

- New shared digitalized mobility services such as MaaS, car sharing, ride sharing, bike sharing are emerging, which have the potential to reduce the use of a private car.

- Nordic Maas study aims to answer the following questions:
  - Can transport emissions be reduced with digitalized mobility services? How much is the potential in different Nordic countries?
  - Can the digitalized mobility services reduce the vehicle kilometers travelled, compared to the use of a private car?
  - What is the emission reduction potential from passenger transport in the Nordic countries in the future, up to 2050?
  - What are the barriers to creating a more transport-efficient society, and what should be done in the Nordic countries to overcome the barriers?
  - What are our policy recommendations?
Barriers to developing a transport efficient society and the wider uptake of mobility services

Service levels
- Inadequate density of services (number of shared cars, offered ride sharing services)
- Individual needs that are difficult to meet with MaaS
- Lack of flexibility of MaaS services
- Lack of value added compared with private car use

Social and behavior
- Attitudes to car use (status, valuing privacy and flexibility)
- Emotional aspects associated with private car use (pleasure, sense of freedom)
- Safety issues with ride sharing or peer to peer services

Legal
- Restrictions related to taxi legislation
- Public procurement principles
- Public transport role and possible related legal restrictions
Barriers to developing a transport efficient society and the wider uptake of mobility services

**Service levels**
- Inadequate density of services (number of shared cars, offered ride sharing services)
- Individual needs that are difficult to meet with MaaS
- Lack of flexibility of MaaS services
- Lack of value added compared with private car use

**Social and behavior**
- Attitudes to car use (status, valuing privacy and flexibility)
- Emotional aspects associated with private car use (pleasure, sense of freedom)
- Safety issues with ride sharing or peer to peer services

**Legal**
- Restrictions related to taxi legislation
- Public procurement principles
- Public transport role and possible related legal restrictions

**Data and integration**
- Access to open data (lack of or challenges with)
- Resistance from public transport providers to integration of private mobility services in platforms
- Lack of value added compared with private car use
- Lack of integration of service platforms by private service providers
Barriers to developing a transport efficient society and the wider uptake of mobility services

Service levels
- Inadequate density of services (number of shared cars, offered ride sharing services)
- Individual needs that are difficult to meet with MaaS
- Lack of flexibility of MaaS services
- Lack of value added compared with private car use

Financial
- Subsidies for public transport can distort transportation markets
- Tax incentives for company cars
- Business model profitability
- Profitability only in dense areas with PT hubs
- Perceived cheap private car use
- Expensive parking spaces for shared cars or lack of spaces
- Subsidies for electric vehicles for private use drive car ownership instead of mobility services

Data and integration
- Access to open data (lack of or challenges with)
- Resistance from public transport providers to integration of private mobility services in platforms
- Lack of value added compared with private car use
- Lack of integration of service platforms by private service providers

Social and behavior
- Attitudes to car use (status, valuing privacy and flexibility)
- Emotional aspects associated with private car use (pleasure, sense of freedom)
- Safety issues with ride sharing or peer to peer services

Legal
- Restrictions related to taxi legislation
- Public procurement principles
- Public transport role and possible related legal restrictions

Organisational
- Resistance to cooperation between some service providers
- Different organisational cultures of different operators
- Different approaches in different areas limit development
- Procurement principles
Incentives and policy instruments to substitute car ownership with mobility services

What can governments do?

• Comprehensive transport pricing (pricing the negative externalities)
• Final support for pilot projects in the fields of multimodality and shared mobility
• Same or better status for shared mobility services than private car use in e.g. taxation
• Subsidizing travel using shared mobility services
• Making the costs of private car use more visible, e.g. through information campaigns
• Setting up new regulation on open data policy

What can cities, municipalities and public transport providers do?

• Allocate dedicated city space for shared mobility services
• Personal emissions trading (case Lahti)
• Making parking more expensive, increasing car-free areas in the city
• Integrate mobility services in the information and ticketing systems of the PT providers, and opening their data
• Pricing PT use at a revenue-, tax- and price-neutral level through MaaS apps
Incentives and policy instruments to substitute car ownership with mobility services

What can companies do to reduce commuting by car?

- Give financial incentives to their employees for choosing other forms of transportation
- Charging daily for parking at company premises
- Make it easier to work from long distance, either home or a close-by co-working hub
- Stop subsidizing commuting to work by car, and give benefits for walking or biking to work

What can MaaS operators do?

- Set up services that are risk free for consumers and easy to use
- Prove to PT providers and other MaaS ecosystem practitioners, that their business models are complementary and not competing
- Also include long-distance trains, to increase their service area
- Develop joint offerings and combine solutions with PT

What can Nordic countries do together?

- Create a more harmonized regulatory environment for shared mobility solutions
- Share best practices, and produce more data on the impacts of shared services
- Look into the option of creating a common datapoint regarding the new EU regulation
Policy recommendations

Recommendation 1.
Launch a pan-Nordic Smart & Green Mobility-as-a-Service transport pass

Recommendation 2.
Introduce incentives and tax benefits to support wider and faster adoption of MaaS and smart mobility services

Recommendation 3.
Design car-free communities and stimulate the demand for new multimodal mobility services

Recommendation 4.
Make employee commuting greener

Recommendation 5.
Introduce comprehensive transport pricing across Nordic countries

Recommendation 6.
Educate and build awareness for smarter and greener transport choices

Recommendation 7.
Fast track implementation of MaaS

Recommendation 8.
Build a better and more comprehensive Nordic data bank

- For recommendation 1, a realistic launch window for the mobility pass is in between 2030-2040.
- For recommendations 2-8 time to implement is now!
Case: Lahti city’s personal carbon trading scheme

What is it?

• The CitiCAP (Citizens’ cap-and-trade co-created) project will make Lahti the first city in the world to plan and implement personal carbon trading scheme (PCT) for citizens.
• Carbon credits will be traded using a mobile application that can detect the different travel modes.
• A1,300 citizens as test users for the PCT app.
• Testing begins in 2019-2020

What are features?

• A smart bicycle highway that will function as a test bed for various smart solutions and other services promoting sustainable mobility
• CitiCAP will collect comprehensive data on people's mobility choices. Data collected on mobility in the city will be made available to companies and other partners.
• Lahti is looking for partner cities, maybe Oslo could be one? Contact: anna.huttunen@lahti.fi
Case: Lahti city’s personal carbon trading scheme

What are keys questions to be solved?

• How to change the mobility attitude and behaviour of citizens to promote the shift from private car to sustainable mobility?

• How medium-size cities may develop their mobility environment: increase the use of sustainable mobility modes, enhance the multimodality and decrease the CO2 emissions, while they cannot use all mass transit options that are available for larger cities?

How does the carbon scheme work?

• Citizens will be able to monitor their emission and budget their carbon use via an open mobility data platform

• Personal carbon trading means that citizens will benefit from reducing their own emissions from mobility.

  − Active cyclists will get gift certificates to bicycle shops, and there will also be public transportation tickets as prizes,” says Saara Vauramo, Lahti city’s environmental director
Contact details

• Please contact:
  − tommi.lampikoski@gaia.fi

• Report to be published by the Nordic Council of Ministers in December 2018

• Thank you for your attention!
We also conducted quantitative analysis of the impacts of digitalized mobility services on VKT and GHG emissions.

- The quantitative analysis included bike sharing, car sharing, grocery home delivery, ride sharing and combined MaaS services.
- The calculation is based on 1. the modal split of transport in different countries and; 2. the average distance travelled in commuting, leisure, shopping/errands etc.
- The penetrations of different services were estimated based on input from task 1.1 desk study.
- The overall CO$_2$ saving potential was estimated between 1 337 – 7 161 ktCO$_2$e/year in the low and high scenarios, which is 1,3 – 7,2% compared to baseline.
- Highest CO$_2$e saving potential in all countries was estimated for bike sharing and car sharing, combined 82% of all savings in the high scenario and 95% in the low scenario.
- The reduction in VKT follows the same pattern as in CO$_2$ savings (e.g. 0,8 – 5,8% reduction in Finland).
We modelled effects of MaaS in 5 Nordic countries

- MaaS applies to all vehicles within the car fleet when it is implemented, whereas increased efficiency and/or electrification only applies to new vehicles.
- Implementation of MaaS is thus more effective from a CO2 reduction perspective while the transport system is still dominated by fossil fuels (contrary to electrification which becomes more effective as battery prices fall and electricity content of elasticity falls).
- Passenger vehicle fleet will still be dominated by fossil-fuel based vehicles well into the 2030s, and therefore it is from now until then that it is most important to activate MaaS.
Our Clients Make the World Cleaner and Safer.

www.gaia.fi